40. *Pseudagrion nubicum.*

Pseudagrion nubicum, De Selys, Bull. Acad. Belg. (2) xlii. p. 501 (1876).

Two specimens.

Fort Johnston, Nyasaland (*P. Rendall*).

41. *Brachybasis rhomboidalis.*

Agrion rhomboidalis, Beauv. Ins. Afr. Amér. p. 85, *Neur.* pl. vii. fig. 1 (1805).

Seventeen specimens.

Fourteen from Fort Johnston, Nyasaland (*P. Rendall*); two from Delagoa Bay (*Distant*); and one from Durban, March 1896 (*Distant*).

42. *Lestes obscurus*, sp. n.

One specimen.

Barberton.

Exp. al. 50 millim.; long. pter. 2 millim.

Male.—Head and thorax black, dusted with pulverulent blue; front of head greenish above, occiput and lower surface of head pale, lower part of eyes pale, and two or three small pale spots near the inner edge of the eyes above. Central carina and three lines on each side of the thorax pale. Legs black. Abdomen bronzy green above towards the base and cupreous beyond; terminal segments broken off; sides and under surface pale, with a black central line beneath. Wings brownish hyaline, with 13 postnodal cross-nervules on the fore wings; pterostigma rather large, uniform black, covering two cells, edged above by a slender reddish line.

This is a very distinct species, somewhat resembling *L. barbarus*, Fabr., but much darker.

XXVIII.—*Descriptions of new Bornean and Sumatran Mammals.* By Oldfield Thomas.

The mammals now described were contained in, or examined in connexion with, the last collection made by Mr. A. H. Everett, whose death, after nearly thirty years' work and study in the East Indian Archipelago, will be lamented by every naturalist, and especially by those who had the privilege of his personal acquaintance. To no one is our knowledge of the fauna, both mammalian and avian, of that part of the world more deeply

indebted, as is evidenced by the large number of species that bear his name, while no one also has done more to encourage younger travellers to take up the subject on which he spent the whole energy of his life.

Taphozous longimanus albipinnis, subsp. n.

Similar to the typical form in all essential respects, but with the wing-membranes white, below throughout, above external to a line drawn from the forearm to the ankle. The forearms themselves, a narrow fringe of membrane just external to them, and the upper surfaces of the fingers are brown above as usual.

Forearm of the type (an adult female) 56 millim.

Hab. Labuan. Coll. A. Everett, Sept. 1892.

Type B.M. no. 93. 4. 1. 29.

Four other Bornean specimens* are similarly white-winged, and there is also a white-winged specimen in the Museum collection from Malacca collected long ago by Mr. A. Charlton. It is probable therefore that this subspecies will prove to range all over Western Malaysia. On the other hand, in Flores there occurs *T. longimanus leucopleurus*, Dobs., which, while with white sides, has the brown wings of *T. longimanus typicus*. All the names in the synonymy of *T. longimanus* were founded on Indian specimens, none on Malayan.

Chimarrogale phœura, sp. n.

Closely allied to *Ch. himalaica*, but slightly smaller, and with the uppersides of the hands and feet, the fringes of swimming-hairs surrounding the digits, and the whole underside of the tail uniformly dark brown. In *Ch. himalaica* the outer halves of the hands and feet, the swimming-bristles on the fingers and toes, and the underside of the tail are all white, in the last-named part contrasting markedly with its brown upper surface.

Dimensions of the type (an adult male, measured in skin):—

Head and body (much overstretched) 120 millim.; tail 82; hind foot 21. Of another specimen in spirit (female): head and body 92; tail 75; hind foot 21·3.

Skull (♀): basal length to front of incisors 23; greatest breadth 12·7; breadth across palate 7·3; length of upper tooth-series 11·8; tip of incisors to tip of large premolars 5·5.

* In one Bornean specimen, however, without exact locality, the wings are browner than usual above, although still white below.

Hab. Saiap, Mount Kina Balu. Coll. A. Everett, October 1895.

This Bornean representative of the genus was first discovered on Mount Kina Balu by Mr. John Whitehead in 1888 *; but his specimen being rather imperfect, and little material being then available, I did not at that date distinguish it from the Himalayan water-shrew, only noting its smaller size. Now, however, that Mr. Everett has sent two further examples of it, while the Museum has been enriched, thanks to the generosity of Mr. W. T. Blanford, by four Sikim specimens of *Ch. himalaicus*, I am enabled to make a comparison between the two forms on a fairly secure basis.

The Japanese water-shrew, *Chimarrogale platycephala*, is a still larger species, the hind foot of a specimen before me measuring 25·5 millim.

It is curious that while our European water-shrew (*Neomys*† *fodiens*) varies so remarkably in colour, the analogous forms of the other parts of the world (*Neosorex* and *Atophyrax* in America, *Chimarrogale* in Asia) should be so locally constant.

Crocidura (*Croc.*) *baluensis*, sp. n.

Allied to *C. fuliginosa*, as determined by Dobson, with which it shares the nearly complete suppression of the long hairs on the tail, but very much larger, with longer, softer, and more smoky-coloured fur. Fur of back about 8 millim. in length. General colour deep uniform smoky grey, the muzzle and the tops of the hands and feet darker brown. Under surface little lighter than upper, the hairs slaty grey for four fifths of their length, their tips pale brown. Tail about equal to the body without the head, closely haired and almost or quite without longer bristle-hairs, deep brown throughout. Lateral gland large, 8·5 × 4 millim. in an adult male, placed about its own length behind the elbow, and almost exactly covered by the hand when the fore limb is directed backwards.

Upper incisors of median size, their points in about the same line as those of the second incisor and large premolar. Second and third unicuspids about equal in height, the latter rather the larger in area. Last premolar and first two molars deeply hollowed out posteriorly. Upper edge of large lower incisors sinuous.

* *Cf.* P. Z. S. 1889, p. 229.

† *Neomys*, Kaup, antedates *Crossopus*, Wagl. See 'Zoologist,' 1893, p. 102.

Dimensions of an adult male specimen in spirit (not the type) :—

Head and body 98 millim.; tail 77; hind foot 18·5; ear 10·5.

Skull: basal length to front of incisors 23·3; anterior breadth 7·9; posterior breadth 11·2; interorbital breadth 5·4; palate length from front of incisors 12; length of upper tooth-row 11·6; tip of $i.^1$ to tip of $p.^4$ 5·9.

The type specimen is a skin, and has a hind foot measuring when damped 18 millim.

Hab. Mount Kina Balu. Coll. A. Everett.

As with the water-shrew, so in this case, the first discoverer of the species was Mr. John Whitehead; but it is only with the additional material obtained by Mr. Everett that I have now felt myself justified in describing the species. Two skins and two spirit-specimens are contained in the collections sent by the latter gentleman, besides a considerable number of shrews referred to the allied, but much smaller, *C. fuliginosa*, Blyth.

Funambulus insignis diversus, subsp. n.

Similar to the typical Sumatran form in essential respects, though perhaps averaging slightly larger, but distinguished by the fur between the black dorsal lines being ashy grey and contrasting markedly with the lateral body-colour, which is brilliant rufous throughout, on shoulders, flanks, and haunches, and is especially noticeable in the lower view, in contrast to the whitish belly. The belly itself is even sometimes washed with rufous. In *typicus*, on the other hand, the lateral colour is more grizzled greyish and less rufous, while the colour between the stripes is almost or quite the same in tone as that outside them.

Dimensions of the type (in skin) :—

Head and body 230 millim.; tail 138; hind foot (wet) 46.

Hab. Baram River, Eastern Sarawak.

Other specimens from Mount Penrisen and Tagora, Sarawak (*Everett*); Tutong River and Mount Mulu (*Waterstraat*).

Type B.M. no. 93. 1. 2. 1. Presented and collected by Charles Hose, Esq.

This brilliantly red-sided squirrel seems to be the Bornean representative of *S. insignis*, the typical form ranging from Malacca through Sumatra to Java. I have long recognized that these two geographical races should be separated, and the occurrence of a number of *S. i. diversus* in Mr. Waterstraat's N. Bornean collection confirms my opinion as to the constancy of its characters.

Funambulus niobe, sp. n.

Closely allied to *F. insignis*, and, like that species, with three black lines running down the back from shoulders to rump, but the general colour is a uniform dark olivaceous brown, the hairs brown, finely ringed subterminally with yellow. This brown colour extends quite uniformly over the whole upper surface, the head, back (both between the lines and outside them), flanks, and uppersides of both fore and hind limbs being of one uniform tint. No lighter line round eye. Edge of ear black. Top of fingers and toes also black. Under surface and inner sides of limbs dirty smoky yellowish, the hairs smoky grey for their basal halves, dull yellowish terminally, the resulting colour being very different from that found in *F. insignis*. Tail-hairs ringed with black and yellow.

Skull with rather a more slender muzzle and a flatter frontal region than *F. insignis*.

Dimensions of the type (an adult female in skin) :—

Head and body 205 millim. ; tail imperfect ; hind foot 44.

Skull : greatest breadth 27·5 ; nasals 16 × 5·9 ; interorbital breadth 12·8 ; tip to tip of postorbital processes 21 ; intertemporal breadth 15·5 ; palate length from henselion 21·5 ; diastema (to $p.^4$) 13·8 ; length of upper tooth-series (excluding $p.^3$) 7. Lower jaw : condyle to incisor-tip 35.

Hab. Pajo, Sumatra. Collected by Mr. Carl Bock.

Type B.M. no. 79. 6. 28. 9.

The single specimen on which this species is based has hitherto been considered, though with doubt, as a variety of *F. insignis* ; but while the general darkening of the body-colour might alone be thought of merely subspecific value, the entire difference in the coloration of the under surface makes me think that intergrades are not likely to occur, and I am therefore compelled to make it a distinct species.

For the information of workers in the East to whom all the literature may not be accessible it may be noted that, by the recent splitting up of *Sciurus* into several genera, the species mentioned under that name in Hose's 'Mammals of Borneo' fall into the restricted genera as follows :—*S. ephippium* is a *Ratufa* ; the species from *hippurus* to *tenuis* (except *Everetti*) remain in *Sciurus* ; *laticaudatus*, *Hosei*, *Everetti*, and *insignis* come into *Funambulus* ; while the pygmy squirrels (*melanotis*, *exilis*, and *Whiteheadi*) take the generic name of *Nannosciurus*.

In the same way, of the Indian squirrels—taking Blanford's 'Mammals of India' as a standard—"*Sciurus*" *bicolor*,

indicus, and *macrurus* belong to *Ratufa*; the species (except *rufigenis* and *lokriah*) from *ferrugineus* to *atridorsalis* and also *Macclellandii* to *Sciurus*; and "*S.*" *rufigenis*, *lokriah*, *palmarum*, *tristriatus*, *Layardi*, *sublineatus*, and *Berdmorei* to *Funambulus*. The excessively long-nosed Chinese forms, *Davidianus*, *Pernyi*, and *pyrrhomerus*, are also, of course, members of the last-named group.

GLYPHOTES*, gen. nov. (of *Sciuridæ*).

Size small. Colour-pattern as in *Sciurus notatus*. Skull with the muzzle excessively short and broad, the nasals parallel-sided, nearly as broad behind as in front; nasal opening flattened from above downwards. Postorbital processes small, situated far back. Anterior end of zygoma more vertical than in *Sciurus*, its base opposite the anterior edge of $m.^1$. Lower jaw weak, the coronoid minute, not surpassing the condyle in height; condyloid process slender, drawn out backwards; angular process narrow.

Upper incisors very broad transversely, shallow anteroposteriorly, their depth not exceeding their breadth, their front faces very convex; as an additional peculiarity they are curved slightly *outwards*, so that along their inner edges they diverge from each other for their terminal millimetre, and their outer edges, when viewed from in front, can be seen to be distinctly concave. Lower incisors exceedingly broad and shallow, divergent, their front faces smoothly *concave*, their edges worn into broad chisel-shaped blades, of which the outer corners are longer than the inner. Cheek-teeth very small in proportion, their pattern as in *Sciurus*; premolars $\frac{2}{1}$.

Glyphotes simus, sp. n.

Size about half that of *Sciurus notatus orestes*. Character of fur, proportions of ears and limbs, and colour throughout almost precisely as in *S. notatus*, if one of the buffy-bellied Bornean examples of that species be selected for comparison. The white lateral band is, however, rather broader and more strongly marked, especially anteriorly. But, with this trivial exception, the resemblance is astonishingly complete, although the small size and stumpy nose would always serve to distinguish the species externally. Upper surfaces of fingers and toes, sides of nose, rims of eyes, and edges of ears buffy yellowish; indistinct whitish postauricular patches present;

* γλύφω, I chisel; in reference to the broad chisel-shaped lower incisors.

white lateral line commencing broadly and abruptly just behind the elbow; tip of tail blackish. Chest and belly dull buffy yellow, on the latter part somewhat suffused with a blackish extension from the dark lateral lines.

Skull and teeth as described above.

Dimensions of the type (an adult skin of doubtful sex) :—

Head and body 129 millim.; tail 106 (with hairs 128); hind foot (wet) 28; ear (wet) 11.

Skull: basilar length (c.) 21; greatest breadth 18·2; nasals 6·9 × 5·1 anteriorly, 4·3 posteriorly; interorbital breadth 11·8; intertemporal breadth 14·5; breadth of brain-case 16·5; palate length from henselion 11·2; diastema (to $p.^4$) 6·4; length of upper tooth-series (from $p.^4$ only) 4·1; breadth of each upper incisor 1·6, of each lower incisor 1·5. Lower jaw: condyle to incisor-tip 19·6; height from coronoid to angle 7·5; back of condyle to notch behind coronoid 6·6.

Hab. Mount Kina Balu, N. Borneo. Coll. A. Everett.

The proper treatment of this most extraordinary little squirrel is a problem of the greatest difficulty, and one for whose correct solution further material is sorely needed. Externally it looks simply a small form of *Sciurus notatus*, not smaller than *S. n. orestes* to a greater extent than the latter is than *S. n. typicus*, so that it might at first sight be thought merely a still more diminutive subspecies of that widely distributed and variable squirrel. On the other hand, its skull and dentition, notably the incisors, are so strikingly different from those of all ordinary squirrels, that it would seem necessary to make a peculiar genus for its reception. It might, in fact, be said that we have in it the curious combination of an animal at the same time different generically and almost the same specifically as *Sciurus notatus*.

Of course there are two obvious alternatives as to its origin —either it is an offshoot of *S. notatus* which has retained its colour and specialized its dentition, or it is a wholly different animal which has independently developed the highly characteristic coloration of *S. notatus*. Which of these alternatives is the true one may be solved by further material, for, on the one hand, links may be found connecting it with *S. notatus* through the subspecies *orestes* (which has broader incisors than *typicus*), or, on the other, further species allied to it may turn up without the characteristic coloration of *S. notatus*. In any case, however, bearing in mind the great importance of the shape of the skull among the Sciuridæ, it seems advisable to have a generic name for a species with such a peculiar skull and highly modified teeth.